United Nations E/2018/SR.25

# Economic and Social Council

Distr.: General
6 June 2018

Original: English

**2018 session**
27 July 2017–26 July 2018
Integration segment

**Summary record of the 25th meeting**
Held at Headquarters, New York, on Thursday, 3 May 2018, at 3 p.m.

*President*: Ms. Chatardova ..... (Czechia)

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*The meeting was called to order at 3.15 p.m.*

**Agenda item 8: Integration segment** (*continued*)

*Panel discussion: "Designing a resilient and sustainable future — a toolkit to better prepare for tomorrow"*

1. **Mr. Huffines** (representative of CIVICUS, World Alliance for Citizen Participation, at the United Nations, New York), moderator, said that, three years after the adoption of the 2030 Agenda for Sustainable Development, more effort was needed to achieve the Sustainable Development Goals. The present discussion would address frontier technologies for building resilience and the impact of technology on policy planning.

2. Since the industrial revolution, science had been the engine of prosperity. However, that prosperity was now imperilled by threats both natural and self-inflicted. Global warming, modern warfare and epidemics limited the capacity of the Earth to sustain its expanding human population. The 2030 Agenda was humanity's effort to create cycles of virtue at critical nexus points in response to those challenges.

3. He suggested framing the discussion on the basis of various questions: What policy planning instruments were available to help countries prepare for hazards? Had technology and innovation helped countries use those instruments more effectively? What regional and global tools were available to support countries' efforts to improve resilience? And how could the Council leverage such tools to assist countries?

4. **Mr. Valdés González** (Director-General of Civil Protection, National Centre for Disaster Prevention, Mexico), panellist, accompanying his statement with a digital slide presentation, said that his Government had adopted a Civil Protection Act that was being approved by the 32 states of Mexico. In the space of one month in 2017, his country had been severely tested by two earthquakes, several tropical storms and several hurricanes. The costs had been over 10 times the available disaster funds, although the larger of the two earthquakes, of magnitude 8.2, had exceeded the threshold for activation of the Government's $150 million catastrophe bond. The best results were achieved when rebuilding funds were distributed to the women of the families in need.

5. Mexico conducted earthquake drills every year on 19 September, the anniversary of the 1985 Mexico City earthquake. Ironically, one of the 2017 earthquakes had occurred two hours after such a drill. The other earthquake had occurred at 10 minutes to midnight, and residents of Mexico City had received prior warning of 85 seconds, an amount of time that would be useful only to a person who had participated in frequent drills and knew exactly what to do.

6. His Government was required by law to provide preparedness information in the 68 native languages of Mexico. The National Centre for Disaster Prevention had found that disaster awareness advertisements that featured children were particularly successful. Technology had great potential to assist in disaster preparations. Generators were helpful, provided they could produce electricity for a long time. Satellite technology had vastly improved access to weather information. His Government was expanding public access to information previously made available only to the authorities. However, the poorest and most vulnerable municipalities in Mexico often lacked technological infrastructure. In addition, culture often hindered preparedness; many events were attended only by women and children, while the men stayed away. Demographic data could show what approaches were best for particular areas.

7. **Mr. Huffines** (representative of CIVICUS, World Alliance for Citizen Participation, at the United Nations, New York) wondered, in the light of the call in the 2030 Agenda for Governments to work together to created integrated solutions, how the Government of Mexico had been encouraging the National Centre for Disaster Prevention to reach out to other similar agencies, and also how it interacted with civil society.

8. **Mr. Valdés González** (Director-General of Civil Protection, National Centre for Disaster Prevention, Mexico) said that although the Federal Government had adopted the Civil Protection Act, the states still needed to be convinced to adopt it. The Centre had shared its preparedness atlas with other Central American countries. No one Government by itself could address all disaster risks.

9. **Ms. Sindi** (Founder and President of the Institute for Imagination and Ingenuity and member of the 10-Member Group to Support the Technology Facilitation Mechanism (2016–2017)), panellist, said that, as senior science, technology and innovation adviser at the Islamic Development Bank, she focused on supporting frontier technologies that could help improve resilience and save lives. In response to human, natural and climate disasters, the Bank had established a resilience and climate change unit to support low-carbon development, the green economy and sustainable systems that adapted to changing climatic conditions. To address disasters resulting from human activity, the Bank provided support for relief assistance, education

and health services, and offered financing for development projects, emergency response, disaster recovery and capacity-building. It also aimed to strengthen regional and international cooperation for the implementation of the 2030 Agenda.

10. More accurate predictions could help find the most economical path to lower risk. To that end, the Islamic Development Bank was making use of the Global Observatory of Science, Technology and Innovation Policy Instruments, developed by the United Nations Educational, Scientific and Cultural Organization (UNESCO), to enhance its own use of science, technology and innovation and to help its member countries predict disasters and take preventive action. Among the frontier technologies used to manage risks were satellite geodesy, through which micro-movements on the surface of the Earth could be observed; community artificial intelligence, which allowed the tracking of changes in rainforests and crime hotspots through the collection of mobile camera data; and biotechnology, which was changing approaches to disease and the use of antibiotics. All those technologies could help prepare for disasters.

11. The Bank had set up a science, technology and innovation department to encourage high-impact investment in frontier technologies. Its initiatives included Engage, a digital platform designed to connect investors and inventors in developing communities with market opportunities and funding, and the $500 million Transform fund to finance innovation. A nurturing environment for global partnerships, which were the key to promoting resilience and frontier technologies, must be established.

12. **Mr. Huffines** (representative of CIVICUS, World Alliance for Citizen Participation, at the United Nations, New York) wondered what policy frameworks and economic incentives should be established by Governments to encourage the private sector to involve more young people, particularly women, in innovation, science and partnership.

13. **Ms. Sindi** (Founder and President of the Institute for Imagination and Ingenuity and member of the 10-Member Group to Support the Technology Facilitation Mechanism (2016–2017)) said that the Islamic Development Bank involved all stakeholders in its science, technology and innovation investments. One of its projects involved training women to install solar panels. All the Bank's projects took into account a climate perspective. Good policies needed to be accompanied by the right incentives and instruments, and must be sensitive to tradition and culture.

14. **Mr. Ahmad** (Director a.i. of the United Nations Environment Programme (UNEP) New York Office) said that climate change was a natural disaster multiplier. Climate risk insurance, which was becoming increasingly prominent in discussions on managing such risk in developing countries, could be implemented at the micro level, where individual policyholders paid premiums and received payouts directly; the meso level, where risk aggregators such as associations, cooperatives, credit unions or non-governmental organizations received payouts and then provided services to individuals; and the macro level, where policies were held by Governments or national agencies, and payouts were used to finance post-disaster programmes and relief efforts for predefined groups.

15. The two main types of climate risk insurance were based either on indemnities, in which case claims were calculated by assessing damage that had already occurred, or on indexes, in which case payouts were triggered when a defined threshold, such as a certain amount of rainfall within a given period, was exceeded. Risk pools had been established for a number of major regions. In Africa, the risk pool was the African Risk Capacity, an African Union agency that was developing the Extreme Climate Facility, a mechanism to help States access private capital should the number of extreme weather events increase.

16. Climate risk insurance products were transitioning from traditional indemnity-based products to index-based and hybrid products. Picture-based crop insurance, whereby crop farmers' own smartphone pictures were used to verify losses, was being piloted. Many agriculture-related programmes linked insurance to credit, access to modern inputs, better technologies or better market outlets for farmers. Technology played a crucial role in building accurate and cost-efficient climate risk solutions. Remote sensing and satellite data had become essential in expanding index-based insurance in developing countries, expediting payouts and enabling risk-reduction activities based on potential drought or flood damage. Blockchain technology could be used to automate insurance processing and enable payouts without a claim being filed. Insurers were also taking advantage of mobile banking technologies to collect premiums and make payments. Crowdsourcing and social networking had made possible peer-to-peer insurance, yet another way in which innovative technology was helping mitigate disaster risk.

17. **Mr. Huffines** (representative of CIVICUS, World Alliance for Citizen Participation, at the United Nations, New York) requested further information regarding the ways in which such technologies as satellite imagery,

blockchain and weather data were applied at the grass-roots level.

18. **Mr. Ahmad** (Director a.i. of the United Nations Environment Programme (UNEP) New York Office) said that the data regarding the application of such technologies were difficult to obtain, but would be crucial in achieving the Sustainable Development Goals.

19. **Mr. Moutenot** (Co-founder of Upstream), panellist, accompanying his statement with a digital slide presentation, said that Upstream automated the processing of satellite data to support decision-making in conservation and development. For example, to help monitor the extent to which farmers involved in conservation projects had complied with water use requirements, the company had automated the analysis of timestamped geospatial observations related to those farmers' fields, thereby obviating the need for conservation groups to inspect individual farms and reducing the cost of monitoring. Upstream had also used timestamped location outlines to produce a large dataset of dams, including those that did not appear on conventional maps, and to automate the detection of locations appropriate for the establishment of low-head-distribution hydropower facilities. That technique could be applied in many other areas, including the delineation of fields and the detection of crop types and irrigation technologies. In partnership with the Nature Conservancy, a United States non-governmental organization, the company had used satellite data to produce a map that showed the depth of water at project locations. That technology could be adapted to show flooding in coastal or urban areas, calculate insurance benefits and model future flood resilience and construction following a disaster. Automated satellite detection could be used to plan project locations, monitor implementation, and optimize results by simulating outcomes. Upstream had recently entered into a partnership with the International Space Station and a private corporation to monitor water management in cotton production in the world's largest river basins. The company's work enabled large-scale monitoring based on field-level data. To make satellite data accessible to the people who implemented projects on the ground, Upstream had developed interfaces for conservation groups, clean energy implementers and others.

20. **Mr. Huffines** (representative of CIVICUS, World Alliance for Citizen Participation, at the United Nations, New York) requested further information regarding the ways in which Upstream worked with national Governments; regional, state and local governments; and non-governmental organizations.

21. **Mr. Moutenot** (Co-founder of Upstream) said that collaboration with governments was most effective at the regional, state and local levels, where knowledge of the situation on the ground was greatest. For example, Upstream was working with the state of California to improve watershed management through a United States Government conservation innovation grant. Relationships with people on the ground were also essential in working with non-governmental organizations and corporations; Upstream was currently working with the Environmental Defense Fund, a United States non-governmental organization, to measure whether coastal resilience projects in the state of Louisiana had performed well enough to qualify for financing through an environmental impact bond.

22. **Mr. Zimmerman** (Co-founder of Coolar), panellist, accompanying his statement with a digital slide presentation, said that 1 billion people in the developing world had no access to electricity and many more lived in energy poverty. As a result, refrigeration was scarce in developing countries and 75 per cent of vaccines were damaged by being stored at the wrong temperature, including by being frozen. Coolar had invented a solar-powered refrigeration system with no battery, running costs or rotating parts. The refrigerant was water, which did not emit carbon dioxide if it leaked, and the system was guaranteed not to freeze vaccines. The company had produced a refrigerator for rural health centres, with a solar panel on the roof. Following field studies among nurses in Kenya and India, it was developing smaller refrigerators, including portable prototypes.

23. The Coolar business model was based on the sale of products to development organizations, health institutions, Governments and private organizations. The company worked with partners in industry and in the field, and the Governments of India and Kenya. Its technology could also be applied in agriculture and transport. Investors in the cold chain market, whose value was estimated at $170 billion, would be willing to finance the Coolar system to reduce the financial losses resulting from the improper storage of vaccines and food.

24. Programmes should be established to enable small companies to interact seamlessly with large organizations such as the United Nations. Long-term innovation and research programmes should be established to match the slow evolution of enterprise incubation and acceleration networks. To facilitate technology transfer in education, experts should be brought together online or in person to exchange ideas and work together on projects. Researchers from developed countries should travel to developing

countries to understand problems on the ground and incubate academic knowledge locally through start-up companies that would, if successful, also benefit people in developed countries.

25. **Mr. Huffines** (representative of CIVICUS, World Alliance for Citizen Participation, at the United Nations, New York) requested further information regarding which types of hybrid organization, combining elements of entrepreneurship, civic activism and philanthropy, were most suitable to the establishment of multi-stakeholder partnerships and the achievement of the Sustainable Development Goals.

26. **Mr. Zimmerman** (Co-founder of Coolar) said that the challenge of sustainable entrepreneurship was to make profit while doing good. Sustainable companies sometimes made less profit than traditional businesses, but they gained more media attention, which was attractive to investors, and did not face the problems encountered by public-private partnerships and joint ventures in balancing different interests. Sustainable companies and grass-roots movements were able to address issues that could not be resolved by companies driven solely by profit. In establishing a sustainable company, the best approach was to begin by taking action to promote sustainable development and, subsequently, to build the business.

27. **Mr. Moutenot** (Co-founder of Upstream) said that he had raised funds from venture capitalists for previous enterprises, but had not done so for Upstream to avoid conflicts with the company's mission of encouraging environmental conservation. The greatest challenge facing sustainable companies was to find funding from sources whose aims did not conflict with sustainable development.

28. **Ms. Sindi** (Founder and President of the Institute for Imagination and Ingenuity and member of the 10-Member Group to Support the Technology Facilitation Mechanism (2016–2017)) said that no framework to support social entrepreneurship existed in the Middle East, where the situation of entrepreneurs was organic and evolving. An environment in which sustainable innovation could thrive must be established to engage creative minds and ensure that no one was left behind. The Transform fund of the Islamic Development Bank had been established to support entrepreneurs in proving concepts, attracting investors to expand companies, commercializing innovation and building capacity. The Fund was intended to engage all stakeholders to establish a culture of creativity.

29. **Mr. Gómez** (Vice-Minister for Science and Technology of the Dominican Republic and Chair of the Commission on Science and Technology for Development at its twenty-first session), discussant, said that the Commission on Science and Technology for Development was the forum for discussion of the ways in which science, technology and innovation could support sustainable development and the implementation of the 2030 Agenda. Its mandate was to improve understanding of science, technology and innovation policies, particularly in developing countries, and to formulate recommendations and guidelines on science and technology in the United Nations system. At its previous sessions, the Commission had discussed the opportunities and challenges presented by information and communications technology, and the implications of massive online courses, three-dimensional printing and digital automation, inclusive digital society, and strategic foresight. At its twenty-first session, to be held in May 2018 in Geneva, the Commission would address the role of science, technology and innovation in increasing substantially the share of renewable energy by 2030 and building digital competencies to benefit from existing and emerging technologies.

30. The Commission had recently addressed the opportunities and challenges in sustainable development related to renewable energy, smart cities, urban planning and geospatial technologies. Progress in such geospatial technologies as the Global Positioning System, data crowdsourcing, web mapping and geospatial information systems could increase the resilience of cities in line with Sustainable Development Goal 11 by improving aid delivery and disaster recovery, prevention and preparedness. Geospatial technologies could also help policy planning and show the effects of disasters on societies; during the 2010 Haiti earthquake, the United Nations and other organizations had coordinated aid delivery using maps based on satellite and crowdsourced data. The Central America Probabilistic Risk Assessment initiative, supported by the World Bank, modelled disasters and had established an open disaster-risk-assessment platform.

31. Through innovation, States had improved their disaster planning and policies and developed new technologies. Big data and computer simulations had improved foresight in sustainable development and maximized the benefits of technology in risk mitigation. Governments had used science, technology and innovation, together with information and communications technology, to meet the challenges of sustainability and inclusion in urban planning. For example, in the Netherlands, data generated by a smart traffic management system was used to predict and monitor traffic density, while, in Brazil, crowdsourcing

data and algorithms were used to predict natural disasters and crimes.

32. The Council's substantive commissions helped Member States build resilience. The Commission on Science and Technology had analysed the use of nanotechnology to purify water and produce energy; the use of drones to deliver supplies, enable precision agriculture and replace humans in dangerous tasks; and the use of satellites to monitor environmental and crop damage. With regard to the establishment of resilient societies, the Commission had analysed the possible impact of new technologies on employment and would, at its next session, discuss the ways in which individuals could make use of emerging technologies. The Commission was also a forum in which representatives of civil society, the academic and technical communities, business, and international organizations could share information and lessons learned regarding the effectiveness of various science, technology and innovation policies. Lastly, the concept of resilience itself must be decoded, through an analysis of causes rather than consequences. For the good of humanity, and in the spirit of the 2030 Agenda, resilience must not be built in response to poverty, vulnerability, marginalization or people's lack of visibility.

33. **Mr. Dewar Viscarra** (Mexico) said that his delegation, which had co-sponsored General Assembly resolution 72/242 concerning the impact of rapid technological change on the achievement of the Sustainable Development Goals, attached great importance to the panel discussion. The nexus between development and such humanitarian issues as natural disasters must be addressed without politicization. Partnerships were essential to the 2030 Agenda, which could not be implemented by Governments without the involvement of corporations, including small companies.

34. **Ms. Hamdouni** (Morocco) requested further information regarding the ways in which a culture of resilience to natural disasters and a spirit of prevention were promoted in Mexico, in particular through new technologies; and the role of the United Nations Forum on Forests, whose thirteenth session would be held in May 2018 in New York, in raising awareness of the role of forests in building resilience.

35. **Mr. Valdés González** (Director General for Civil Protection, National Centre for Disaster Prevention, Mexico) said that the worsening of the annual hurricane season in Mexico helped remind people of the need for disaster prevention. To ensure that earthquake prevention was effective, it must be conducted in the native languages of the country's 7.5 million indigenous people. His Government focused on prevention not only in the long term, up to 2030, but also in preparing for the 2018 hurricane season.

36. **Mr. Ahmad** (Director a.i. of the United Nations Environment Programme (UNEP) New York Office) said that awareness of the role of forests in resilience would mainly be raised through Member States, which were essential to building bridges between agencies and forming partnerships. Forestry and biodiversity were on the programme of work of UNEP, which had sent experts in the area to the Forum. The Programme worked in partnership with the Food and Agriculture Organization of the United Nations on the mechanism for reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries, and cooperated with the United Nations Framework Convention on Climate Change process.

37. **Mr. Zimmerman** (Co-founder of Coolar), said that, in building resilience and sustainability, the efficient use of data and of such resources as energy, food and medicine was more important than new inventions.

38. **Mr. Moutenot** (Co-founder of Upstream) said that he was hopeful that technologists would switch careers from financial and social networking companies to areas in which they would make a lasting impact in resilience and sustainability. He undertook to employ a dozen engineers and technologists in 2018.

39. **Mr. Ahmad** (Director a.i. of the United Nations Environment Programme (UNEP) New York Office) said that UNEP was committed to forging inclusive partnerships with the private sector in the field of science, innovation and technologies to implement the 2030 Agenda.

40. **Ms. Sindi** (Founder and President of the Institute for Imagination and Ingenuity and member of the 10-Member Group to Support the Technology Facilitation Mechanism (2016–2017)) said that the Islamic Development Bank was committed to upholding the right to live in dignity and prosperity. It provided financial and legal help, and support in entrepreneurship and intellectual property protection, without discrimination on the grounds of religion or nationality, to start-ups and partnerships in science, technology and innovation. The Bank was committed to alleviating poverty and providing education and medicine for all in the developing world. The Transform fund was intended to create an environment in which talent could flourish to support the implementation of the Sustainable Development Goals.

41. **Mr. Valdés González** (Director General for Civil Protection, National Centre for Disaster Prevention, Mexico) said that his Government, which had already been brought close to citizens by natural disasters, undertook to bring out the best in people at times other than disasters, including by raising awareness of United Nations work in disaster prevention.

42. **Ms. Triyanti** (representative of the Young Scientists in the Science and Technology Advisory Group of the United Nations Office for Disaster Risk Reduction for 2017 to 2018 and panellist in session 2 of the segment) said that scientific research was essential to the establishment of projections based on multi-risk data to prepare the world for the disaster-related effects of environmental change.

43. **Mr. Huffines** (representative of CIVICUS, World Alliance for Citizen Participation, at the United Nations, New York) said that, in adopting the 2030 Agenda, Member States had resolved to end poverty and hunger, combat inequality, build peaceful, just and inclusive societies, protect human rights, promote gender equality and the empowerment of women and girls, protect the planet and its natural resources, and create conditions for sustainable, inclusive and sustained economic growth, shared prosperity and decent work for all, taking into account different levels of national development and capacities. Climate change, conflicts and refugee emergencies did not respect national borders and could be resolved only through cooperation at the United Nations among Governments, international institutions, business and citizens.

*Closing of the segment*

44. **The President** said that the deliberations at the integration segment had helped maintain the momentum for the implementation of the 2030 Agenda. Participants had emphasized the multidimensional nature of the concept of resilience, which had originated in the natural sciences and was now prevalent in psychology, sociology, economics, information technology, disaster risk reduction and other disciplines. Many countries and cities had developed resilience strategies, and the sharing of experience by Governments, local authorities, civil society organizations and private companies was invaluable. Community engagement was the key to national resilience, and social cohesion and participation, inclusive decision-making and trust among actors were essential to such engagement. Technology could be effective in building resilience, but must be managed properly to avoid the creation of new vulnerabilities. The success of resilience strategies depended on the involvement of all citizens; in an interconnected world, awareness regarding global challenges must be raised through the provision of evidence-based information and through education and training. The international community must make every effort to create resilient and innovative societies, which were essential to growth and change.

*The meeting rose at 5.30 p.m.*